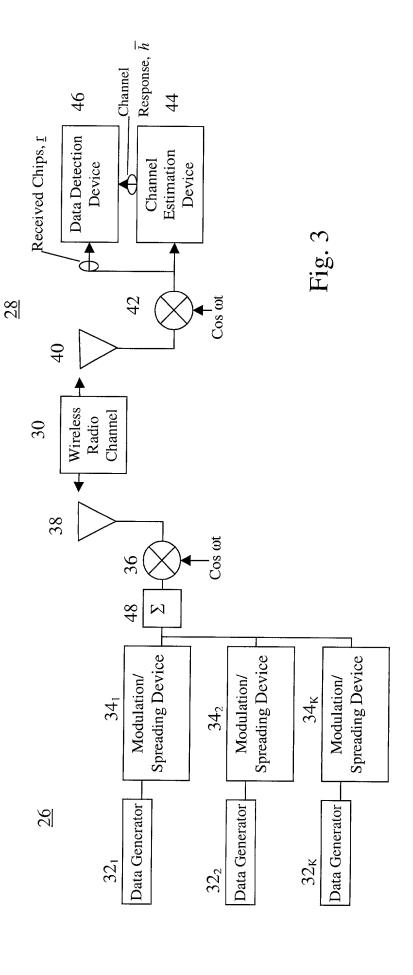


Fig. 2



Construct a model of the received midamble sequence data, \bar{r} , the channel response, \bar{h} , and the known midamble codes, such as

$$\left[\sum_{k=1}^{K} M^{(k)}\right] \overline{h} = \overline{r}$$

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Reconfigure the model by replacing the known midamble codes with K right circulant matrix blocks, B, such as

$$\left[\sum_{k=1}^{K} M^{(k)}\right] = \begin{bmatrix} B \\ B \\ \vdots \\ B \end{bmatrix}$$

Solve the reconfigure model using a least squares solution, such as by a discrete fourier transform or a single cyclic correlator solution

Fig. 4